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ABSTRACT

Fifty-eight students (in grades 5 and 6) of average or near-average intelligence (who were reading 2 or more years below their normal expected level and who learned best through the auditory modality) took part in a study to evaluate the following areas: the effectiveness of two auditory highlighting procedures for increasing listening comprehension; the relationships between those procedures and measures of auditory and visual memory; and pupil preference for auditory highlighting procedures. Auditory highlighting procedures used were "voice cues" (in which a female voice was substituted in place of the originally recorded passages read by a male) and "pause cues" (in which the tapes were stopped by the experimenter and re-activated by Ss at the beginning of major points). Results indicated that neither highlighting technique significantly increased listening comprehension, that treatment difference scores were related to visual memory scores, and that one-half to one-third of Ss were able to predict the cue condition in which they would perform the best. (LS)

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AUDITORY HIGHLIGHTING AS A STRATEGY FOR IMPROVING LISTENING COMPREHENSION

by

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The "medium" of the printed page can accommodate VARIOUS *ways* and *means* to call **attention** to major points. Classroom teachers and publishers have employed numerous graphic procedures to highlight or cue facts to aid learning. There has been little research that deals with similar strategies for tape recorded materials. A review of the literature indicates that cueing or prompting verbal learning tasks have dealt primarily with paired associate or serial learning tasks using nonsense syllables. (Ausubel, 1963; Cofer, 1961) These studies have shown that cueing has been effective in assisting verbal learning in an experimental setting, but they do not accurately portray the type of learning found in the classroom. Sticht (1972) reviewed instructional methods for improving learning by listening and reported that the results have shown little or no facilitative effects due to cueing. Ausubel (1960) has proposed the use of "advance organizers" to facilitate learning by listening.

This paper will discuss a recent experimental study, whereby two specific strategies were used to highlight or cue major points within recorded passages. The two specific types of auditory highlighting used were referred to as "voice cue" and "pause cue" techniques. It was hypothesized that these two procedures would serve as "advance organizers" and improve listening comprehension. The "voice cue" procedure used a female voice that was substituted in place of the originally recorded passages read by a male broadcaster. "Pause cues" employed a tape recorder that enabled the experimenter to stop the recording at the beginning of major points. Subjects were directed to re-activate the recorder by pushing the button to hear the major points. Recorded passages from the *STEP Listening Test*, Levels 4A and 4B, were used as criterion tests to determine the effectiveness of the two procedures.

Fifty-eight students from fifth and sixth grade in four public school programs were used in the study. These pupils were being served by special services dealing with academic difficulties and reading problems, including teacher consultants, a resource center, and special reading programs. All subjects were reading two or more years below their normal expected level, but were of average or near-average intelligence. Each subject was assigned to one of four treatment groups.

These subjects represented a group of individuals that were more inclined to use the auditory channel (listening) to learn and/or gain information. This study was aimed at gaining information on: a) the effectiveness of voice cues and pause cues for increasing listening comprehension in poor readers, b) relationships between these procedures and measures of auditory and visual memory, and c) pupil preference for highlighting procedures and their use of recorded material in the classroom.

Table One shows the averages and ranges of chronological age, I.Q., reading level, and grade placement for each of the four groups.

TABLE ONE

PUPIL IDENTIFICATION DATA DISTRIBUTION

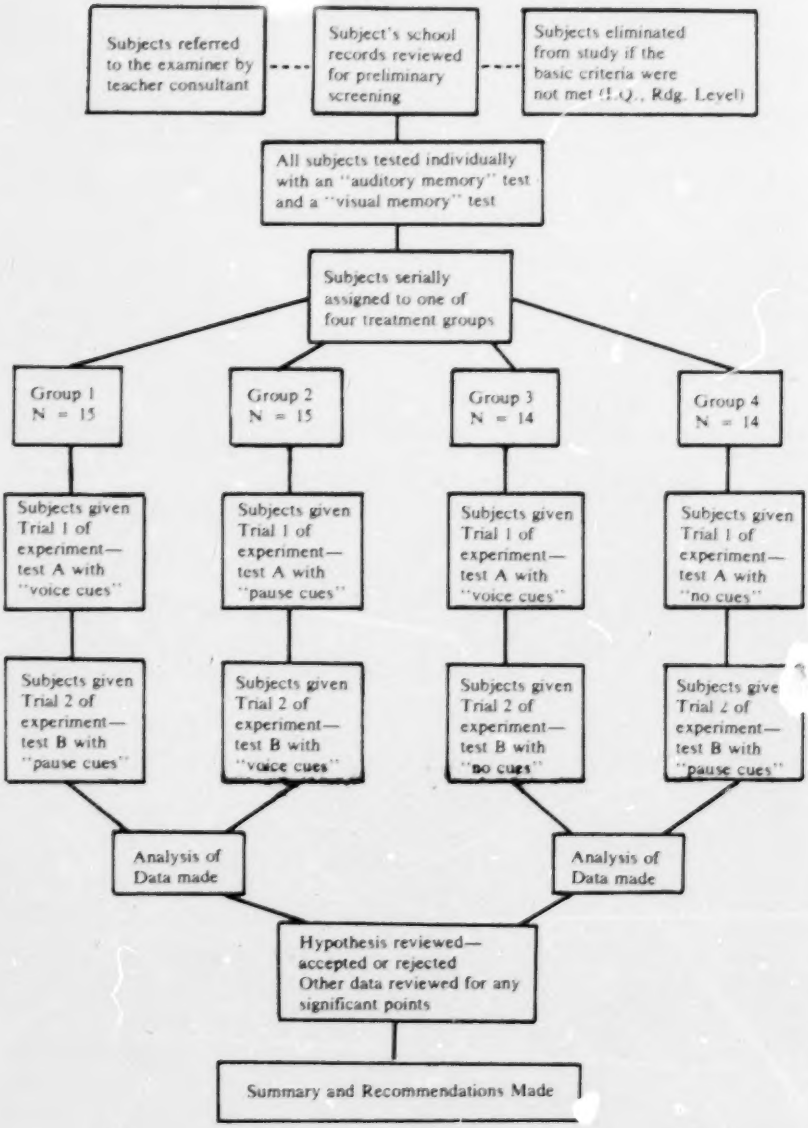
Group	No. of Subjects	C.A.	I.Q.	Reading Level
I	15	11-11	93.8	2.9
	8-5th grade 7-6th grade	10-1 to 13-3	80 to 111	1.8 to 3.8
II	15	11-9	92.1	3.3
	8-5th grade 7-6th grade	10-6 to 12-11	80 to 114	2.3 to 4.4
III	14	11-11	90.9	3.2
	8-5th grade 6-6th grade	11-1 to 13-6	82 to 105	2.0 to 4.3
IV	14	11-10	92.9	3.1
	7-5th grade 7-6th grade	10-9 to 13-7	80 to 106	2.0 to 4.2

MAJOR POINTS FROM LITERATURE

A review of related literature gives credibility to the study and the variables that were examined. Specifically, these supportive findings are as follows:

1. The role listening plays in the individual's everyday life experiences is very high. (Duker, 1966)
2. Use and availability of the tape recorder in school programs today has greatly increased. (Lance, 1973)
3. Fifth and sixth grade pupils have a preference for oral presentations over reading. (Fenwick, 1971; Friedman, 1959)
4. Pupils in elementary schools acquire information more readily from listening than reading. (Witty and Sizemore, 1959; Fawcett, 1966)
5. Pupils who are experiencing academic difficulties due to reading problems and/or learning disabilities learn more by listening, although this modality is not the most efficient. (Murphy, 1972)
6. There is little evidence to support the principle that pupils' judgments on their ability to listen is not a trustworthy criteria. (Hall, 1954)
7. Auditory learning can be enhanced by cueing or prompting. (Ausubel, 1963; Sticht, 1972)
8. A change in activity or interaction with an object related to the listening activity aids attention. (Witkin, 1971; Farrow, 1964; Allen, 1960)
9. When information is attenuated there is increased understanding. (Webster and Thompson, 1954)
10. Some types of materials are learned more easily than other types when presented orally. (Hampleman, 1955)
11. Specific planning of listening experiences can improve listening even though listening skills are not taught directly. (Canfield, 1960)

EXPERIMENTAL PROCEDURE FLOW CHART


Subjects referred to the examiner by teacher consultant
Subject's school records reviewed for preliminary screening
Subjects eliminated from study if the basic criteria were not met (I.Q., Rdg. Level)
All subjects tested individually with an "auditory memory" test and a "visual memory" test
Subjects serially assigned to one of four treatment groups
Group 1 N = 15
Group 2 N = 15
Group 3 N = 14
Group 4 N = 14
Subjects given Trial 1 of experiment— test A with "voice cues"
Subjects given Trial 1 of experiment— test A with "pause cues"
Subjects given Trial 1 of experiment— test A with "voice cues"
Subjects given Trial 1 of experiment— test A with "no cues"
Subjects given Trial 2 of experiment— test B with "pause cues"
Subjects given Trial 2 of experiment— test B with "voice cues"
Subjects given Trial 2 of experiment— test B with "no cues"
Subjects give Trial 2 of experiment— test B with "pause cues"
Analysis of Data made
Analysis of Data made
Hypothesis reviewed— accepted or rejected
Other data reviewed for any significant points
Summary and Recommendations Made

SUMMARY OF FINDINGS

The experiment failed to show that auditory highlighting using "voice cues" or "pause cues" could significantly increase the listening comprehension scores of subjects with low reading comprehension. Data for the four treatment groups is summarized with the means and standard deviations for each treatment in Tables Three, Four, and Five in Appendix A. The differences in the means between the "pause cue" and "voice cue" treatments are very negligible with Groups I and II (Table Three). The differences in the means between the highlighted ("voice/pause cue") treatments and the non-highlighted ("no cue") treatments was small with Groups III and IV. Group III's difference in means was 1.93 points in favor of the "voice cue" treatment over the "no cue" treatment (Table Four).

A significant relationship was obtained between the scores achieved on the visual memory test and the difference scores for the two treatments at the .05 level of confidence for Groups I and III. This same relationship was found to exist at the .01 level of confidence when the findings for Groups I and II were combined. The measure of auditory memory and the difference scores for the two treatments was found to be statistically significant at the .10 level of confidence only for Groups I and III.

Data on subjects' preference for a specific type of highlighting treatment and the treatment in which the highest score was obtained indicated that two-thirds of the subjects in Groups I and II did predict the method in which they performed the best. Fifty percent of the subjects in Groups III and IV were able to accurately indicate the treatment (cued—no cue) in which they received the highest score.

Specific incidents and individual scores do need further clarification that the group statistical analysis does not reflect. These findings and recommendations for future studies will be discussed in the following pages.

IMPLICATIONS FOR TEACHING

Many of the teachers whose students participated in the study reported that they were surprised that their pupils would sit and attend for a 35 to 40 minute session. These same pupils were sometimes referred to as restless, hyperactive, and sometimes lazy or

lethargic. It may well be that the specific treatments used in this study *only* help the individual to attend better, but don't affect comprehension.

The nature of the subjects used in this study may have contributed to the failure to show significant differences between types of treatments. These pupils were reported as poor readers with low reading comprehension. Previous research findings point out correlations varying from .45 to .80 for reading comprehension and listening comprehension. *It may well be that it takes more than a cueing or highlighting technique to improve the listening comprehension of this type of student.* Specific pre-training in how to listen might have been an appropriate procedure to use with these students, then followed by the auditory highlighting treatments. Another factor to consider is that many of the subjects were school failures and perhaps the motivation to do well was not great. They may have contributed only token attempts during the treatment trials.

In reference to the auditory highlighting strategies themselves, it appears that they ("pause cue" or "voice cue") should perhaps be stronger and more precise. An example of this idea is:

RECORDED MATERIAL → "Pause Cue" →
MAJOR POINT → "2nd Cue"

The second cue might be a "pause cue," "tone cue," or another alternative. The major point of the passage might also utilize another voice, as in the "voice cue" treatment. This procedure could facilitate the mental processing of the verbal information being received. Further considerations include:

1. Other strategies might be used to cue major points. These strategies could include loudness, repetition, tones, and the use of multi-sensory stimulation using visual and/or tactile cues to enhance auditory learning.
2. The subjects themselves could arrange or deploy the auditory highlighting cues to assist their auditory learning.
3. The use of "voice cues," "pause cues," and other procedures need further exploration to determine their effectiveness in enhancing the learning of other types of students. This further research could include normal populations, children with bilingual status, children who are hard of hearing, and children with learning disabilities.

There is also evidence indicating that the subjects' familiarity with learning by means of tape recorded materials may have affected the resultant scores. Few of the subjects in this study had used tape recorded materials for any extended periods of time. The subjects from only one of the test sites listened to taped materials as a part of their regular educational program. The students and teachers from the other test sites reported that they rarely used tape recorded materials as a means for learning. This finding indicates that any future endeavors that attempt to use auditory highlighting procedures should consider:

1. The influence of preliminary training with specific highlighting procedures, which would include practice sessions to increase familiarity with the cueing procedures, materials and equipment.
2. The use of auditory highlighting procedures with subjects over an extended period of time with pre and post measures in order to determine if indeed the strategies are incorporated by the subjects. These procedures would insure against the lack of familiarity with the strategies being used.
3. Exploration of subject material length or duration using auditory highlighting treatments in order to determine if there are optimum lengths of time for highlighting strategies to be employed.

Measures of "auditory memory" and "visual memory" do appear to have a predictive relationship with the type of highlighting technique that is most effective for students to use with recorded materials. This points out an area for further investigation. The student's preference for a specific method of highlighting should be considered by the teacher when creating recorded materials.

QUESTIONNAIRE FINDINGS

A questionnaire was administered to all subjects when they had completed the two experimental treatments. The questions all dealt with the subject's acceptance and/or preference for tape recorded material and procedures used in the study. All subjects were urged to give their own opinions and feelings about the use of recorded materials as a means of instruction in the classroom. A summary of the findings for each specific question follows:

Question #1a—"Which method of highlighting did you prefer and find most helpful? Why?

Twenty-four of the 30 subjects chose the "pause cue" method, with the remaining six choosing the "voice cue" method. The subjects' individual scores were examined to determine if they were higher in the stated preferred method. Fourteen of the 24 (67%) did achieve a higher score with the "pause cue" method of highlighting. Their scores were from 1 to 18 points higher. All six subjects who elected the "voice cue" method had scores from 2 to 10 points higher with this method.

TABLE TWO (A)

STUDENTS' STATED PREFERENCE FOR HIGHLIGHTED TREATMENTS (PAUSE CUE-VOICE CUE) COMPARED TO BEST COMPREHENSION SCORE

GROUPS I AND II

	Pause Cue	Voice Cue
Number of Students Who Picked Treatment	24 80% of total group	6 20% of total group
Actual Number of Students Who Received Highest Score With Their Choice	14 67% of total group	6 100% of total group

Question #1b—"Do you think that ("voice cue"/"pause cue") was helpful for you when listening to the taped material? Why?"

A total of 20 of the 28 subjects (71%) reported that they felt the highlighting of major points was helpful. The "pause cue" method was chosen by 13 subjects, with seven stating they preferred the "voice cue" method. Six of the subjects (46%) who reported that the "pause cue" method was helpful obtained scores 2 to 29 points higher than with the "no cue" method. Four (57%) of those who chose the "voice cue" method achieved scores 2 to 8 points higher than with the "no cue" treatment.

TABLE TWO (B)

SUBJECTS' STATED PREFERENCE FOR HIGHLIGHTED TREATMENTS (CUED-NO CUE) COMPARED TO BEST COMPREHENSION SCORE

GROUPS III AND IV

	Cued	No Cue
Number of Students Who Picked Treatment	20 71% of total group	8 29% of total group
Actual Number of Students Who Received Highest Score With Their Choice	10 50% of total group 6/pause cue 4/voice cue	4

All subjects were asked why they felt the specific highlighting method they chose was helpful. A sampling of the responses to *Question 1a* "Why" follows:

"The pauses help you to understand better."

"It's better than reading—easier."

"Pauses, because you can think through what was said and get ready for the next thing."

"Easier—You don't have to work as hard when listening."

"Pause lets you get ready or organized."

"Voice cues were direct—you didn't have to guess so much as with the pauses."

"Voice kept going—a lot smoother."

"The voice cues tapes went too fast."

"Voice cues were distracting."

Pause—"You could go as fast as you wanted."

Pause—"It gave you something to do."

Aside from feeling that listening was easier than reading, a few of the students did identify the rationale and theory for using the highlighting techniques. Several subjects also identified factors they felt did not make the techniques helpful. These included the idea of dis-

traction due to two different voices or that the tape stopped too much. Although the "pause cue" method was preferred by the majority of subjects, there were those who found it distracting and not helpful. This points out that individual differences must also be accounted for when using these highlighting techniques.

Question #2—"Would you listen to recorded school material if it were available for you to use?"

In response to this question, 56 of the 58 subjects stated that they did want to listen to or use recorded school subject material.

Question #3—"What school subjects would you like to have tapes to learn and study with in school?"

Recorded materials for math, reading, spelling, and social studies were the subject areas requested by the majority of the students. Other subject areas mentioned included art, geography, and science.

Question #4—"What would be a reasonable or good time limit to listen to tape recorded material?"

Twenty-six of the 58 subjects (44.8%) chose 30 minutes as a good time limit for taped materials, with the next highest choice, listed by 13 subjects (22.4%), as 20 minutes. Seven subjects listed 25 minutes and 12 reported that 10 to 15 minutes was a good time limit or length for tapes.

Question #5—"What didn't you like about listening to tape recorded material?"

The only objection that was mentioned by the subjects (6 of 58) was the use of earphones. They reported that their ears got sore from listening with the earphones for long periods of time. (Subjects used earphones for approximately 35 minutes for each part of the treatment procedure.)

DISCUSSION

Although the experimental study did not show statistically significant differences in comprehension scores achieved with the different treatment conditions by the subjects in Groups I through IV, as pointed out earlier, these non-significant comprehension score differences were in favor of the cued conditions for all groups. There are several factors that may indeed explain the failure to show statistically significant findings. These factors include: a) number of subjects, b) characteristics of subjects, c) cueing techniques used, and d) the type of criterion task used.

There is a suggestion that cued conditions can be helpful in achieving greater listening comprehension scores. This suggestion is consistent with previous related research reported by Sticht (1972) and Ausubel (1960). It should be noted that the number of subjects in any group did not exceed 15. If the obtained difference scores are truly dependent upon the different conditions, an increase in the number of subjects might result in significant statistical findings.

It is also likely that cueing techniques can be further improved with specific attempts to alter their nature and form. Techniques selected for use in this study were determined on an a priori basis and applied in a limited pilot study procedure. However, there are numerous other alternatives which might be explored in regard to their strength or effectiveness in facilitating comprehension. For example, cueing might include an attention cue prior to the significant material, a cue highlighting the material during its presentation and a cue signalling the termination of significant material. Attention cues might include pauses, flashing lights, tactile stimulations, verbal admonishment, sound stimuli or any other device which might serve to direct attention to the task. Similarly, highlighting cues (those designed to increase the stimulus value of the significant material during its presentation) might include alteration in loudness level, voice quality changes, or rhythmic cues, accompaniment by visual representation of the same material. Termination cues may also be of numerous types involving various forms and sensory modalities. Repetition of significant points would also be a facilitating procedure under certain conditions and would be wholly compatible with recorded material presentations.

The major purpose of these possible alternatives would be to increase the degree of comprehension and memory. An in-depth analysis of the effectiveness of any one of them and their combination is suggested as a pre-requisite to further study if one desires to maximize obtained differences.

Comparative studies with subjects who rely on listening a great deal, such as the visually handicapped and the hearing handicapped who must rely more heavily on sensory modalities other than listening, may do much to reveal techniques for improving the efficiency of cueing techniques. Another area of investigation could be a study whereby the subjects themselves arrange or deploy the auditory highlighting cues to assist their auditory learning.

Future endeavors that attempt to determine the effectiveness of auditory highlighting procedures should direct the subjects to use the

techniques over an extended period of time. This research would assist in determining whether subjects can devise their own procedures which will help them over time to utilize the highlighting treatments more readily. A study of the effects of training for increasing visual and/or auditory memory to assist those individuals who may be deficient in one or both should also be explored to determine their effect on listening comprehension or auding ability. These considerations may help those individuals who exhibit a lack of familiarity with the medium being used and those individuals who do not make efficient use of the highlighting techniques.

The type of criterion task *(STEP Listening Test)* used in this study may have been an inappropriate measure to determine the effectiveness of the auditory highlighting treatments. There is very little agreement reported in the literature that supports the use of the *STEP Listening Test* or the other two major listening tests, *Brown-Carlsen Listening Comprehension Test* and the *Durrell Sullivan Reading Capacity Test* (Duker 1966, 1971).

Two other areas of investigation in this study need further investigation: 1) relationships between visual and/or auditory memory measures and types of cueing treatments in which subjects received highest scores, and 2) subjects' preferences for specific types of cueing. Findings of significant relationships between auditory and/or visual memory measures and cue treatment for certain subject groups are somewhat difficult to interpret in view of the fact that such relationships were not consistently present for all subject groups. It is interesting, however, to note that the highest achieving subjects on the auditory memory measure in Group I consistently achieved the highest difference scores in favor of voice cues over pause cues. Similarily, Group I also showed a relationship between high visual memory and higher voice cue scores as compared to pause cue scores. Other groups, however, gave no indication of a relationship between auditory or visual memory and the type of cue or no cue treatment used in this study.

One might expect that those subjects achieving high scores on auditory memory might perform better with auditory cueing techniques and that those scoring high on visual memory measures might perform better with visual cueing. This study did not utilize visual cueing and therefore offers no leads regarding this question. It does, however, suggest that further study of these potential relationships would be useful and perhaps profitable. If it were shown that higher auditory memory or higher visual memory could predict higher com-

prehension with auditory or visual cueing techniques respectively, one could select procedures of maximum benefit for individual children. Thus, an approach to improving classroom performance could be demonstrated.

Based upon the data obtained in this study regarding cue preference, it is not yet clear that such preferences are indicative of increased comprehension performance. It is likely, however, that when difference scores are great there is a validity to student preference. Four subjects in the experimenter's opinion, gave unequivocal preferential response and verbal elaboration regarding their treatment preference. In each of these cases comprehension scores were markedly improved under the subject's preferred treatment. Consequently, it is likely that student preference could be a useful guide to the teacher in selecting instructional techniques or approaches for individual children.

FUTURE RESEARCH NEEDS

In order to study the variables that are closely related to auditory learning and/or listening comprehension and factors that influence the modality of learning the experimenter believes that the following are principle needs:

1. Further studies that investigate and identify effective cueing/highlighting procedures for use with recorded materials.
2. Once specific cueing procedures have been established, the focus should turn to specific types of children and/or styles of learning.
3. Further investigation should be directed to pupils' preferences for highlighting techniques with recorded material.
4. The numerous research findings of previous experimental studies relating to the facilitation of learning through the auditory channel need to be made more readily available and understood. These findings need to be interpreted for the educator, researcher, parent, and the learners themselves.
5. Comparative studies with subjects who rely on listening a great deal, such as the visually handicapped, may do much to reveal strategies employed by them with auditory learning tasks.
6. Developmental age levels need to be considered to determine "what" and "when" highlighting strategies, such as pause cues, voice cues, and others, produce significant increases in auditory learning.

7. The effects of training for increasing visual and/or auditory memory to assist those individuals who may be deficient in one or both of these should be explored to determine their effect on listening comprehension or auding ability.
8. Ways and means of identifying subjects who are auditory or visual learners need to be confirmed. Existing and new measures that have a high correlation with listening skills and auditory learning need to be identified.

The area of "auditory learning" is a new found focus in education today. It is the hope of this author that it does not experience the misunderstanding, overestimation, and poor interpretation that "visual learning—visual perception" has acquired within the past few years in the educational mainstream. The needs are great and the potential for this avenue for learning looks very good. It still remains for the countless studies and present ongoing efforts in this area of learning to be coordinated and communicated to the classroom teacher. The initial efforts of the Consortium on Auditory Learning Materials for the Handicapped of the Special Education Instructional Materials Center has made a significant contribution in this direction during the 1973-74 school year.

The contributions of Duker, Lundsteen, Foulke, and numerous others involved with auditory learning point out a teaching variable that is too often ignored, many times forgotten, and yet easily accessible. This channel for learning remains one of the most frequently used and earliest to be developed in the child, yet it never has been developed to its true potential within the classroom. Wayne D. Lance (1973) in the monograph "Instructional Media and the Handicapped" points out,

> The audio tape reader, which has become almost as common a piece of equipment in classrooms for the handicapped as the overhead projector, has received relatively little coverage in the literature, perhaps due to the rather straight-forward advantages in this media.

APPENDIX A

TABLE THREE

COMPARISON OF COMPREHENSION SCORES
FOR GROUPS I AND II
WITH PAUSE CUE AND
VOICE CUE TREATMENT TRIALS

Group/Time	Number	Mean	S.D.	Range
Group I				
Trial 1 (voice cue)	15	45.20	12.50	25 to 69
Trial 2 (pause cue)	15	45.13	13.47	23 to 63
Group II				
Trial 1 (pause cue)	15	45.93	9.45	17 to 62
Trial 2 (voice cue)	15	44.73	14.15	25 to 60

TABLE FOUR

COMPARISON OF COMPREHENSION SCORES
FOR GROUP III
WITH VOICE CUE AND NO CUE TREATMENTS

Group/Time	Number	Mean	S.D.	Range
Group III				
Trial 1 (voice cue)	14	44.86	10.35	26 to 62
Trial 2 (no cue)	14	42.93	11.63	17 to 62

TABLE FIVE

COMPARISON OF COMPREHENSION SCORES
FOR GROUP IV
WITH PAUSE CUE AND NO CUE TREATMENTS

Group/Time	Number	Mean	S.D.	Range
Group IV				
Trial 1 (no cue)	14	41.00	11.04	19 to 60
Trial 2 (pause cue)	14	45.07	9.62	23 to 62

REFERENCES

Allen, William H. "Audio-Visual Communication," *Encyclopedia of Educational Research*, Edited by Chester W. Harris. New York: MacMillan, 1960, pp. 119-137.

Ausubel, David P. *The Psychology of Meaningful Verbal Learning*. New York: Grune & Stratton, Inc., 1963.

Ausubel, David P. "The Use of Advance Organizers in the Learning and Retention of Meaningful Verbal Material," *Journal of Educational Psychology*, Vol. 51, 267-272, 1960.

Brown, Donald P. "And Having Ears They Hear Not," *NEA Journal*, 39:586-87, November, 1950.

Campeau, Peggie. "Selective Review of Audiovisual Media of Instruction," Chapter V, *Instructional Media: A Procedure for the Design of Multi-Media Instruction, A Critical Review of Research, and Suggestions for Future Research*. Monograph No. 2, Leslie J. Briggs, Peggie L. Campeau, Robert M. Gagne, and Mark A. May. Pittsburgh, Pa.: American Institutes for Research, 1967.

Canfield, George R. "A Study of the Effects of Two Types of Instruction of the Listening Comprehension of Fifth Grade Children," Doctoral Dissertation. Syracuse, N.Y.: Syracuse University, 1960. *Dissertation Abstracts*. 21:2622, 1961.

Cofer, Charles N. *Verbal Learning and Verbal Behavior*. New York: McGraw-Hill Book Co., 1961.

Duker, Sam. *Listening: Readings*, Vol. I. Metuchen, N.J.: Scarecrow Press, 1966.

_____. *Listening: Readings*, Vol. II. Metuchen, N.J.: Scarecrow Press, 1971a.

_____. *Teaching Listening in the Elementary School*. Metuchen, N.J.: Scarecrow Press, 1971b.

_____. "Listening" in *Encyclopedia of Education Research*, 4th ed., Edited by Robert L. Ebel. New York: MacMillan, 1969.

_____. "Listening," Chapter III, *Review of Education Research*. Vol. XXXL, No. 2, April, 1961, pp. 145-151.

Early, Margaret J. "Communication Arts" in *Encyclopedia of Education Research*, 3rd ed., Edited by Chester W. Harris. New York: MacMillan, 1960, p. 305-312.

_____. "Developing Effective Listening Skills," *Teaching Listening in the Elementary School*, Edited by Sam Duker. Metuchen, N.J.: Scarecrow Press, 1971, pp. 36-44.

Educational Testing Service. *Cooperative Sequential Tests of Educational Progress: Directions for Administrating and Scoring Listening 4A*. Princeton: ETS, 1957.

_____. *Cooperative Sequential Tests of Educational Progress: Directions for Administering and Scoring Listening 4B*. Princeton: ETS, 1957.

_____. *Cooperative Sequential Tests of Educational Progress: Manual For Interpreting Scores: Listening*. Princeton: ETS, 1957.

_____. *Cooperative Sequential Tests of Educational Progress: Teacher's Guide*. Princeton: ETS, 1957.

Farrow, Vern Leslie. "An Experimental Study of Listening Attention at the Fourth, Fifth, and Sixth Grade," Doctoral Dissertation. Eugene, Oregon: University of Oregon, 1963. *Dissertation Abstracts*. 24:3146, 1964.

Fawcett, Annabel E. "The Effect of Training in Listening Upon the Listening Skill of Intermediate Grade Children," *Elementary English*, 43:473-476, May, 1966.

Fenwick, James J. "Slow Learners and Listening," *Listening: Readings*, Vol. II, Edited by Sam Duker. Metuchen, N.J.: Scarecrow Press, 1971.

Friedman, Robert M. *A Comparative Study of the Retention Level of Verbal Material Presented Visually and Orally: Fifth Grade Pupils*. Garden City, N.Y.: Adelphi College, 1959.

Hall, Robert Oscar. "An Exploratory Study of Listening of Fifth Grade Pupils." Doctoral Dissertation. Los Angeles, Calif.: University of Southern California, 1954.

Hampleman, Richard S. "Comparison of Listening and Reading Comprehension Ability of Fourth and Sixth Grade Pupils," *Dissertation Abstracts*. 10:1757, 1955.

Lance, Wayne D. *Instructional Media and the Handicapped*. Monograph, ERIC Clearinghouse on Media and Technology. Stanford, Calif.: Stanford University, December, 1973.

Learning Through Listening. Proceedings of a Special Study Institute Sponsored by the Division of Special Education. Sacramento, Ca.: California State Department of Education, 1973.

Murphy, John F. "Learning by Listening: A Public School Approach to Learning Disabilities," *Academic Therapy Quarterly*, Vol. 8, No. 2, Winter 1972-73, pp. 167-189.

Sticht, Thomas G. "Learning by Listening," Chapter 11, *Language Comprehension and the Acquisition of Knowledge*. Eds. John B. Carroll and Roy O. Freedle. Washington, D.C.: V. H. Winston & Sons, 1972, pp. 285-314.

Taylor, Stanford E. *Listening: What Research Says to the Teacher*, No. 29. Washington, D.C.: National Education Association, 1964.

Wester, J. C., and Thompson, P. O. "Responding to Both of Two Overlapping Messages," *Journal of the Acoustical Society of America*, 26:396-402, May, 1954.

Witkin, Belle R. Auditory Perception: Implications for Language Development," *Listening: Readings*, Vol. 2, Edited by Sam Duker, Metuchen, N.J.: Scarecrow Press, 1971, pp. 351-368.

Witty, Paul A. and Sizemore, Robert A. *Studies in Listening*. Champaign, Illinois: National Council of Teachers of English, 1959.